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ABSTRACT

A study followed up on 75 dyslexic young adults who had been referred to the Word-Blind Centre in London, England to examine remedial help received, present level of skill, educational record, achieved occupational status, and coping strategies. Subjects, 68 men and 7 women ranging in age from 18 to 30 years, were interviewed for two hours concerning their experiences since their referral to the Centre. Results indicated that: (1) those who received remedial help at the Centre regarded their experience as some sort of salvation; (2) early training in spelling skills was a critical factor in later improvement in spelling; (3) oral reading improvement was a more general effect of remedial teaching than specific programs at the Centre; (4) subjects scored well on a variety of tests of science and technical subjects, but very low in the traditional arts subjects; (5) a majority of the subjects' occupations exhibited a downward shift in status compared to that of their fathers; and (6) coping strategies such as relying on amanuenses, "camouflaging," taking written work home, or relying on memory were used by most of the subjects. (RS)

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Abstract

The paper discusses findings of a follow-up study made of seventy-five young adults who, as school children, had been referred to the Word-Blind Centre established in London, England, in 1964 by the Invalid Children's Aid Association.

The sample comprised sixty-eight men and seven women, ranging in age from 18.2 to 30.4, with a mean age of 23.3 years. A semi-structured interview procedure was employed (each interview lasting approximately two hours), which had as its main targets the following categories of information:-

(1) The interviewee's assessment of his present competence in reading and spelling, and the objective comparison of that competence via the same tests as were administered to him at the time of his referral to the Word-Blind Centre.

(2) An account of his educational history since referral to the Word-Blind Centre, with particular reference to those areas in which he had experienced most difficulty, and any compensations he had been able to achieve.

(3) A description of any remedial help he had received before, at the time of, or subsequent to his referral to the Word-Blind Centre, and how effective that assistance had seemed to be.

(4) A discussion of his occupational experience: in particular, difficulties encountered and strategies evolved for coping with them.

(5) His level of performance on a number of formal and informal tests, including Schonell's Graded Word Spelling Test, Form B (1950); the Neale Analysis of Reading Ability Test, Form A (1963); Digit-Span; Sentence Learning; Serial Subtraction; and Verbal Fluency. The first

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two of these tests, in addition to their rôle in (1) above, provided the opportunity for a comparison of present reading and spelling standards between interviewees who had and had not received a substantial amount of remedial help, and between those who had merely been assessed at the Word-Blind Centre and those who had been pupils there.

Only a selection of the results can be considered in the time available for presentation, and the emphasis will be placed on remedial help received; present levels of skill; educational record; achieved occupational status; and coping strategies.

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Coping with Dyslexia

Introduction

The 'Word Blind Centre', as it was called, was established in London in 1964 by the Invalid Children's Aid Association, and maintained until 1972. Some years after its closure, the Association placed the Centre's case records in the care of the Cambridge Specific Learning Disabilities Group for the purposes of research, and we were thus provided with the unusual opportunity of following up the careers of a number of young people who had been referred to the Centre when they were children. Some of the cases had been both assessed and taught at the Centre; some had been only assessed. I shall refer to them as Pupils and Non-pupils respectively.

The Sample

The sample comprised 75 cases. We shall see that, in some aspects of the analysis, a few of these did not provide results. But all the findings are based on a substantial majority. The break-down of the sample is represented in these first two slides:

SLIDES 1 A & B

22 parents also interviewed. Cases: 68 male, 7 female
Mean CA 23 years, 3 months (range: 18.2 to 30.4)
Mean CA at WBC: about 12 years
Mean IQ at WBC: 114 (verbal and performance comparable)
44 Pupils; 31 Non-pupils.

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Procedure

The data were gained from a semi-structured interview procedure, which had as its principal objectives:-

1. The interviewee's own assessment of his present competence in spelling and reading, and its objective comparison with that existing at the time he attended the Word Blind Centre.

2. A number of formal and informal tests, including Schonell's Graded Word Spelling Test, Form B (1950); the Neale Analysis of Reading Ability Test, Form A (1963); Digit-Span; Sentence Learning; Serial Subtraction; and Verbal Fluency.
   The first two of these tests provided us with the means for the objective comparison I mentioned, and also for the comparison of present spelling and reading standards between interviewees who had and had not been **pupils** at WBC, or who had and had not received a substantial amount of remedial help in general.

3. An account of the interviewee's educational history since referral to the Centre, with particular reference to those areas in which he had

experienced most difficulty, and any compensations he had been able to achieve.

4. Information regarding any remedial help he had received before, at, or subsequent to his attendance at WBC, and how effective it had seemed to be.

5. Information about his occupational experience; and particularly, about any difficulties encountered, and strategies evolved for coping with them. (As we shall see, all of these were intelligent, but some more positive than others.)

Remedial help

The next slide records, without comment, the remedial help, or rather lack of it, received by the cases **outside** their childhood referral to WBC.

SLIDE 2

69% had had no form of remedial teaching - in or out of school - **before** referral. 52% received no help **after** referral. And 29% received no remedial help before **and** after referral.
Even allowing for the fact that these data reflect the position some twenty years ago, they are depressing figures. There were cases where a sympathetic teacher was remembered with affection and gratitude, but such instances were swamped out by more typical comments such as:-

'Teachers would not accept dyslexia - thought (I was) retarded'
'Teachers treated me as a dunce. Few friends'.
'Ran away from school at fifteen'
'School refused to help with remediation'
'Never considered dyslexic by school (State) despite WBC diagnosis'. Etc.

For just a few, though, there **was** a shift to a more understanding school attitude after assessment at the WBC. Spelling was regarded more leniently; the pupil was no longer seen as 'abnormal'; or a class teacher was led to give private help. The struggle then became one with the LEA to obtain support for attendance at the Centre. Some LEAs refused to acknowledge the existence of dyslexia even after WBC diagnosis (some still do!). More refused to pay fees for the Centre, and in some cases the parents had to go to court to win support from the Authority.

All this effort, though, was thought worthwhile. With scarcely an exception, those cases who received remedial help at the Centre regarded their experience there as some sort of salvation - in the consciousness that their spelling and reading skills were undergoing some improvement; in the self-understanding that they gained of their problems; and in the feeling of relief that this insight brought, together with a determination to achieve despite the handicap.

Present spelling and reading skills

What were spelling and reading skills like at the time of interview? Using the spelling test employed in the WBC assessment (Schonell: 5-15 years), we obtained results which showed spelling was still a problem.

SLIDE 3

Spelling Age (years)

	5-7	7-9	9-11	11-13	13-15	Total
Pupils:	0	6	12	16	9	43
Non-pupils:	2	7	4	13	1	27
Total:	2	13	16	29	10	70*

* No test data in 5 cases

In fact, only 14% had a spelling age of 13 or over, and 44% of the tested sample fell in the range 11 or below, confirming the statement of spelling difficulty made by many of the cases during interview.
When, though, we compared this performance with their WBC standard, some improvement was noticeable, and an interesting point emerged. You can see from this slide (SLIDE 4) that Pupils showed a significantly greater degree of improvement compared to Non-Pupils (p=2.5%).

SLIDE 4

Increase (Years of Spelling Age)

	0-2	2-4	4+	Total
Pupils:	4	15	24	43
Non-Pupils:	8	11	7	26
Total:	12	26	31	69*

* No test data in 6 cases

Incidentally, it was not the case that there was any significant difference between Pupils and Non-pupils in their original spelling disability. But what happens when the comparison is in terms of **duration** of remedial tuition, irrespective of source?

SLIDE 5

Increase (Years of Spelling Age)

Remediation	0-2	2-4	4+	Total
2+ years:	5	18	22	45
< 2 years:	7	8	9	24
Total:	12	26	31	69*

* No test data in 6 cases

This small shift in distribution of cases produces a **non-significant** result (p=>10%); and what lies behind it? Pupils with less than 2 years remedial tuition showing higher gains, and Non-pupils with 2 or more years remediation showing lower gains.
The results do seem to suggest that early training at WBC was a critical factor in later improvement in spelling, and we may ask what characterised the Centre's programme. Without the opportunity for proper comparative study it is difficult to specify what may have been responsible, but it is worth noting that the programme involved an individually-tailored combination of Fernald Kinaesthetic Method, phonic blending, alphabetic spelling, and the Edith Norrie Letter Case. In this last, letters are arranged according to where the sound is produced (lips, tip of the tongue, or back of the throat), and to select a letter the child has to become aware of how he is articulating it. Combined with the teaching of sound units, and the emphasis throughout on writing, the programme represented a particularly thorough and systematic multi-sensory approach.

Where **reading** was concerned, we employed in the interview the Neale Analysis of Reading Test (Form A), which had also been included in the battery of psychometric tests administered at WBC. The Neale gives measures of reading rate, accuracy, and comprehension plus the use of contextual cues. Its formal administration could not be fitted into the limited interview time, and we adopted a short-cut procedure. The interviewees were asked to read passages from the 'advanced' section of the test. Their efforts were recorded, and rated independently by two judges afterwards (with 90% agreement) as:-

(a) Normal - Class 1
(b) Mildly impaired - Class 2
(c) Severely impaired - Class 3

I can give you the criteria later, if you wish.

These were the results:-

SLIDE 6

	Reading Standard			
	1	2	3	Total
Pupils:	22(51%)	17(40%)	4(9%)	43*
Non-Pupils:	9(29%)	16(52%)	6(19%)	31
Total:	31(42%)	33(45%)	10(13%)	74*

* No test data for 1 pupil

All the cases were severely backward in reading at the time of WBC referral, so there is clear evidence of substantial improvement. But this (POINT) superior showing of the pupils is not sufficient to tip the balance into significance. Unlike the spelling results, here it is comparison on the basis of **duration** or **amount** of remedial teaching, regardless of source, which

produces a significant result (p=5%).

SLIDE 7

	Reading Standard			
Remediation	1	2	3	Total
2+ years:	20(43%)	24(51%)	3(6%)	47
<2 years:	11(41%)	9(33%)	7(26%)	27
Total:	31(42%)	33(45%)	10(13%)	74*

* No test data in one case (1 pupil)

The suggestion is that, in contrast to spelling, improved performance in oral reading in this sample is a more general effect of remedial teaching. I should add that, at the time of WBC referral, the mean WISC IQs for these remedial groups showed no significant difference, and the average reading backwardness was closely similar.

Educational record

What had these young people been able to achieve educationally? At the time of their schooling, first-level examinations in English secondary schools took the form of CSE and GCE 'O' level, and the education itself - as now - could take place in fee-paying Independent Schools or maintained State Schools.

As our first statistic we may note that 41% of the sample had taken these first-level examinations at Independent Schools, and 52% at State Schools - the other 7% experiencing transfer between State and Independent Schools, and sitting examinations in both sectors. These figures are in marked contrast to the general distribution of secondary school children at the time. The comparison can be only rough, but a general household survey for the early '70s indicates 89% State Schools and only 11% Independent and others.*

For the sake of brevity, I shall limit the analysis to 'O' level results, and the outcome there was that 69% of the cases had gained one or more passes; 33% ultimately succeeding on six or more subjects. Quite a good performance - but we must note 'ultimately', and, too, that there was a clear relation between the nature of the scholastic subject and the success.

If we take English Language, this is the picture:-

SLIDE 8

* via Reid, I. (1978). Survey 1972, 1975.

37% (28 cases), a low figure, passing; but only 20% (15), even lower, at their first attempt. And then an unhappy tail - 7 passing at the second attempt, 4 at the third, 2 at the fourth, and 16% (12), most of whom made more than one attempt, failing to pass at all. Of these, 3 cases had taken the English Language examination five times without success, and one had failed on seven separate occasions!

Incidentally, there was a number of cases who had never sat an examination in English Language at all - neither 'O' level nor CSE - as both their schools and their parents thought they stood no chance of passing.

But when we turn to 'O' level in Mathematics, there is a noticeable contrast.

SLIDE 9

48% (36 cases) had a pass, and nearly all of these - 43% (32 cases) - had been successful at the first attempt. Only 7% (5 cases) had failed.

These specific examples of English Language and Mathematics give a contrast which is greatly amplified when we consider relative success in the whole range of traditional arts subjects and the cluster of Mathematical, Scientific and Technical subjects. 75.5% of all 'O' level passes were in Science subjects, including Maths and Geography, and in Technical and Applied subjects such as Technical Drawing, Woodwork, Metalwork and Photography. All the Arts subjects put together produced the other 24.5% of passes. And the distinction was reflected in the figures for failure: 16.5% in Science subjects, 9% in Technical and Applied subjects, 30% in Arts subjects.

The next examination hurdle is GCE 'A' level.

SLIDE 10

The proportion of the total sample proceeding to this examination of course attenuates (36%), but the contrast between Science/Technical and Arts subjects sharpens. Now 81% of passes are in Science and Applied subjects, and only the tail of the distribution lies in traditional Arts subjects such as English, History and Politics. But the standard achieved was low, even in the Science subjects. 40% of the total passes were at the lowest grade (E), only one A grade being recorded, and over a third of 'A' level examination attempts were followed by resits. Only in Technical and Applied subjects was there a surer touch.

And when we follow through the 21% of cases who reach the level of Higher Education - University, Polytechnic and College - it is again this Applied field which offsets an otherwise very modest level of performance. While other courses are marked by withdrawal, failure, or low class of degree, technical courses show a measure of success. Though most of the candidates following them had a history of relatively severe dyslexic difficulty - at least as shown by poor school records - the largely practical emphasis of the courses, and the often multiple choice nature of the examinations, placed such qualifications well within their competence. Even the more theoretical 'Technician' type of qualification was accessible: Aeronautics, Building Technology and Telephony

were represented, and Certificates and Diplomas in such subjects as Business Studies, Mechanical Engineering and Agriculture.

Let´s look now at how these educational qualifications were translated into actual jobs.

Achieved occupations

Using the classification of occupations defined by the Office of Population Censuses and Surveys (1980), we compared the distribution of occupational status for the 75 cases and for the fathers - as given in the case records.

SLIDE 11

As you can see, 77% of the fathers were in professional and ´intermediate´ occupations (Groups 1 and 2), but only 28% of the cases. The figures suggest a downward shift in status, but we need to be more precise. So, compare cases with their **own** fathers:

SLIDE 12

The total cases reduce to 60, as we have to reject 12 cases and 3 fathers whose occupations are not classifiable, but of those 60, 63% fall below the father´s occupational status.

Obviously, caution is needed in drawing conclusions. These are young people, mostly at an early stage in their careers, and, though one suspects the disparity is rooted in a period before the present employment difficulties, downward social mobility amongst the young in the UK has been general for some time. But the figures remain striking, and their message of reduced job status is reinforced by the specific individual ´steps down´ that emerged:

SLIDE 13

OCCUPATIONAL STATUS OF INDIVIDUAL CASES AND THEIR FATHERS

CASE	Category	FATHER	Category
Unemployed Farm-worker	IV	Teacher	II
Building Contractor	IV	Journalist	II
Jewelry Maker	IIIM	Company Director	II
Post Office Technician	IIIM	Lawyer	I
Chef	IIIM	Psychiatrist	I
Fishfarm Worker	IV	Solicitor	I

CASE	Category	FATHER	Category
Storekeeper	IV	Quantity Surveyor	II
Sales Representative	IIIN	Doctor	I
Chef	IIIM	Solicitor	I
Canteen Chef	IIIM	Systems Analyst	II
Fitters Mate	IV	Actuary	I
Quality Control Assistant	IV	Electrical Engineer	I
Sail Maker	IIIM	Civil Engineer	I

The impression conveyed by this list, of recourse to employment making only a light demand on verbal skills, is confirmed by the observation that only 13 out of the 57 cases which could be classified by the criterion of that job demand fell into a category we could call 'substantial' (SKILLED; VERBAL).

SLIDE 14

Moreover, these managerial and professional posts could only be held down by the exercise of a great deal of idiosyncratic self-help, as we shall see in a moment when I turn to COPING STRATEGIES.
Determination remained: the boiler-maker who would like to study engineering at University; the shopfitter who wanted to run his own business; the clerical assistant who had a burning desire to teach - but the realities of their condition seemed more likely to set them permanently in verbally semi-skilled or 'non-verbal' occupations.

Coping Strategies

A prominent and intriguing feature of the data was provided by the interviewees' descriptions of strategies they had evolved to help themselves in their jobs, and, indeed, through their educational careers. The schedules indicate an unusually protracted and high level of use of technical aids. Calculators were employed for what would normally have been mental arithmetic; typewriters were used to help the effort to write, and telephones and tape-recorders were frequently mentioned as supplementary aids in meeting the problem of writing.
Reference to dictionaries to reduce spelling difficulties was extensively reported.

Of course, nowadays there is an ever-growing tendency amongst the **non-dyslexic** to avail themselves of such aids, so perhaps more striking are the many instances reported of qualitatively idiosyncratic strategies. For instance, in the case of spelling, some of these young people found even the recognition and sequencing demands of dictionary use too great. They turned instead to colleagues and friends to provide and check the spelling of written efforts; or they photocopied letters and used them as models. Where the occupation required the regular provision of product names or technical terms, these would be carried around on 'handy' pieces of paper and referred to.

Three types of frequently employed strategy, which go well beyond the simple sense of 'aid' were:-

1. Relying on amanuenses - generally parents, siblings, girlfriends or wives - to do the writing.

2. 'Camouflaging' - where the defects of spelling were concealed by handwriting deliberately made illegible.

3. Disguising difficulties with writing by taking the work home - out of the public gaze - and drafting and re-drafting there, 'behind the scenes'.

Such strategies reveal the considerable sensitivity engendered in many dyslexics by their disability. In a very few, personality predisposition seems to lead to reaction-formation, and these cases would talk about their difficulties to everybody. But attempts at concealment were characteristic of the majority, and they took many forms - in some cases pretty negative coping strategies.

In writing, not only camouflage through illegibility, but restriction to only those words that **could** be spelled - even where the entry of amounts on cheques was concerned. Reading too was affected by attempts at concealment - at the most extreme by the feigning of illness to avoid reading aloud.

Often the embarassment was expressed in more general ways, which could lead to further difficulties. One interviewee had failed half his 'O' level examination papers, but told everyone that he had passed them all. Many made a practice of never telling their employers that they were dyslexic. And the concealment itself was frequently self-frustrating, as when the prospect of form-filling prevented the individual from making job applications, or caused him to reject possibilities where he thought he might need to write details in front of his potential employer.

Finally, the interviews produced some interesting data bearing on the subject of **memory.** Forms of sequencing and memory difficulty are regularly recurring observations in the literature on specific learning difficulties, and there were certainly cases in our sample who had developed coping strategies to circumvent weakness in remembering - or the exposure of that weakness. Various mnemonic devices were employed, and some cases had to go further than that. Here are two which not only illustrate the point, but serve to give the 'flavour' of coping, with its attendant complication of life:-

Garage Foreman: When taking examinations, employed circumlocutions to avoid difficult spellings. Never volunteered the fact that he is dyslexic to his employer. Relies on a dictionary at work, and if he is still unsure of spelling, makes his writing illegible. **Copies car names and colours from wall charts, and technical terms from manuals (for daily reference).**

Cartographer: **At work, writes every instruction down lest he forgets.** Uses dictionary, but also asks for spellings. **Has a notebook of technical terms in his desk.** Any writing assignment is taken home for drafting, and his girlfriend or mother is asked to vet it. Said that, when they became engaged, he will rely on his fiancee for written work.

In these cases, and others I could have quoted, information that might have been stored 'in the head' has to remain external, and to be **read** when needed. But what about these two?

Building Contractor: Girlfriend helped with paperwork, and corrected his spelling mistakes in letters. When he was at school, **memorised passages for reading aloud in class, and always sat next to friends willing to whisper the ending.**

Chef: **Never writes down waiters' orders, but has trained himself to remember them.**

Such cases, and there were others, are the antithesis of the first two. Here the coping strategy is **to rely on memory,** to compensate for weakness in reading and writing. **These** cases belong to the Susan Hampshire club - the delightful dyslexic actress who cannot read her lines at rehearsal, but has to learn them by heart at that early stage.

Dyslexia is, in fact, a blanket term for a **variety** of specific learning difficulties (and aetiologies), and it is not **necessarily** the case that an individual has to show memory impairment to justify the assessment.

D.J. Bruce

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